UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

NOAA Fisheries No.:
2004/00630

August 5, 2004

Nancy H. Weintraub
Environmental Specialist
Department of Energy
Bonneville Power Administration
P.O. Box 3621
Portland, Oregon 97208-3621

Re: Endangered Species Act Section 7 Formal Consultation and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation on the Catherine Creek Off-Channel Habitat Project, Upper Grande Ronde Subbasin, Union County, Oregon

Dear Ms. Weintraub:

Enclosed is a document containing a biological opinion (Opinion) prepared by NOAA's National Marine Fisheries Service (NOAA Fisheries) pursuant to section 7 of the Endangered Species Act (ESA) on the effects of the proposed Off-Channel Rearing Habitat Project on Catherine Creek, near the City of Union, Oregon. The Bonneville Power Administration (BPA) determined that the action may adversely affect Snake River (SR) spring/summer Chinook salmon (*Oncorhynchus tshawytscha*) and SR steelhead (*O. mykiss*) and requested formal consultation on this action. In this Opinion, NOAA Fisheries concludes that the proposed action is not likely to jeopardize the continued existence of the above-listed species, nor adversely modify designated critical habitat for SR spring/summer Chinook salmon. As required by section 7 of the ESA, NOAA Fisheries includes reasonable and prudent measures with nondiscretionary terms and conditions that NOAA Fisheries believes are necessary to minimize the impact of incidental take associated with this action.

This document also contains a consultation on essential fish habitat (EFH) pursuant to section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and its implementing regulations (50 CFR Part 600). The upper Grande Ronde subbasin has been designated EFH for Chinook and coho (*O. kisutch*) salmon. NOAA Fisheries concludes that the proposed action may adversely affect designated EFH for Chinook salmon and coho salmon. As required by section 305(b)(4)(A) of the MSA, included are conservation recommendations that NOAA Fisheries believes will avoid, minimize, mitigate, or otherwise offset adverse effects on EFH resulting from the proposed action. As described in the enclosed consultation, section

305(b)(4)(B) of the MSA requires that a Federal action agency must provide a detailed response in writing within 30 days of receiving an EFH conservation recommendation.

If you have any questions regarding this letter, please contact Donald Hubner, fisheries biologist, in the Eastern Oregon Branch of the Oregon State Habitat Office at 541.975.1835, ext. 223.

Sincerely,

D. Robert Lohn
Regional Administrator

cc: Lyle Kuchenbecker, Grande Ronde Model Watershed
Jeff Zakel, ODFW
Keith Paul, USFWS

Endangered Species Act - Section 7 Consultation
Biological Opinion

&

Magnuson-Stevens Fishery Conservation and Management Act
Essential Fish Habitat Consultation

Catherine Creek Off-Channel Habitat Project
Catherine Creek Watershed,
Upper Grande Ronde Subbasin,
Union County, Oregon

Agency:	Bonneville Power Administration
Consultation Conducted By:	NOAA's National Marine Fisheries Service, Northwest Region
Date Issued:	August 5, 2004
Issued by:	Russell M Strach for _____ D. Robert Lohn Regional Administrator
Refer to:	**2004/00630**

TABLE OF CONTENTS

1. INTRODUCTION

The biological opinion (Opinion) and incidental take statement of this consultation were prepared by NOAA Fisheries in accordance with section 7(a)(2) the Endangered Species Act (ESA) of 1973, as amended (16 USC 1531 *et seq*.), and implementing regulations at 50 CFR 402. The essential fish habitat (EFH) part of this consultation was prepared in accordance with section 305(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) (16 USC 1801 *et seq*.) and implementing regulations at 50 CFR 600. The administrative record for this consultation is on file at the Oregon State Habitat Office.

1.1 Background and Consultation History

On June 3, 2004, NOAA Fisheries received a letter from the Bonneville Power Administration (BPA), with attached project information and biological assessment (BA) from Neilson Natural Resources Consulting, in which the BPA proposes to fund the Catherine Creek Off-Channel Habitat Project (Project). The purpose of the Project is to enhance off-channel rearing habitat for juvenile anadromous and resident salmonids. The BPA designated Mr. Lyle Kuchenbecker of the Grande Ronde Model Watershed as the Federal representative for this Project and requested ESA section 7 formal consultation with a determination for the proposed Project of "may affect, likely to adversely affect" (LAA) Snake River (SR) spring/summer Chinook (*Oncorhynchus tshawytscha*) and SR steelhead (*O. mykiss*). Formal consultation was initiated on that date.

A site visit was conducted on June 28, 2004. On June 30, 2004, minor modifications were discussed and incorporated into the Project after phone conversations between Lyle Kuchenbecker of the Grande Ronde Model Watershed, Jeff Zakel of Oregon Department of Fish and Wildlife (ODFW), and Donald Hubner of NOAA Fisheries.

1.2 Proposed Action

The proposed action is the funding of the construction of an off-channel habitat project in Catherine Creek. The proposed Project involves draining two man-made ponds and salvaging fish that may be stranded by Project activities. While the ponds are drained, the 24-inch inlet culvert and headgate into the upper pond will be replaced with a 36-inch culvert and new headgate. Two deteriorating concrete water regulatory structures, one in each pond, will be reinforced, and one of two 24-inch culverts, at the outflow end of the lower pond, will be removed while the other will be replaced with a 36-inch culvert. Approximately 3,380 cubic yards of sediment will be removed from the ponds and woody debris will be placed into the ponds to improve habitat complexity. Pond drainage, fish salvage, riparian disturbance/wood placement, and flow reestablishment are all components of the proposed action likely to have effects on ESA-listed salmonids.

In the original Project design, off-channel work would begin in early June 2004 with all work to be completed by the end of July 2004. The ponds would be slowly drained and any fish that did not swim out with the water would be removed while the water is low. Water will be pumped

from Catherine Creek to a concrete tank to supply stock water to a local farmer while the ponds are dry. Sediment removal was scheduled for late June, with lower pond culvert removal/replacement, concrete structure reinforcement, and woody debris placement occurring after sediment removal is complete. The intake culvert and headgate would be replaced during July. This work will be isolated from the stream by a temporary eco-block cofferdam. The ponds would be slowly refilled after all work is completed. The refilled ponds will be allowed to settle before re-establishing flow-through, and no discharge from the ponds would be allowed to enter the creek before July 1.

Given the late arrival of the biological assessment (BA) and project description, it is not possible to conduct the work as originally scheduled. If consultation is completed in time for the work to be completed within the 2004 in-water work window for this reach of Catherine Creek (July 1 - August 15) (ODFW 2000), work will commence upon receipt of this biological opinion (Opinion) and will be completed before August 15. The accelerated schedule is similar to the original plan except that the inlet headgate and culvert replacement will follow immediately after pond draining, and sediment removal and woody debris placement will occur mostly after the removal and/or replacement of culverts and the reinforcement of the concrete structures. If consultation is not completed in time for the 2004 in-water work window, the Project will be completed during the 2005 in-water work window and will follow the original schedule.

Conservation Measures Within Project Design

- The settling pond inlet will be closed and the ponds will be drained slowly to allow fish to escape through the downstream outflow.
- Remaining fish will be captured and transported to Catherine Creek by an ODFW Fisheries biologist. Electrofishing will be used only if netting is not successful and will follow NOAA Fisheries electrofishing guidelines.
- Pumps used to draw stock water from the creek will be screened according to NOAA Fisheries criteria to ensure no fish are taken.
- All heavy equipment will be cleaned before entering the ponds for sediment removal.
- Riparian disturbance will be minimized to the greatest extent possible and should be limited to a sparsely vegetated area used to access the lower pond.
- Work to replace the inlet headgate and culvert will be accomplished during the ODFW in-water work window for this reach of the Catherine Creek (July 1 to August 15).
- Cofferdams will be installed to isolate the inlet work area in order to minimize sediment input to Catherine Creek during headgate and culvert replacement.
- No running water will be allowed to come into contact with wet concrete that has not cured for more than 24 hours.
- To minimize sediment input to Catherine Creek, the ponds will be refilled slowly and allowed to settle before reestablishing return flow to the creek. Initial flow-through will be slow to minimize sediment mobilization. No water will return to the creek from the ponds before July 1 and outflow will be monitored to ensure sediment transport is negligible.

2. ENDANGERED SPECIES ACT

2.1 Biological Opinion

2.1.1 Biological Information

Snake River (SR) Spring/Summer Chinook Salmon

The SR spring/summer Chinook salmon evolutionarily significant unit (ESU) was listed as threatened, and protective regulations were issued under section 4(d) of the ESA, on April 22, 1992 (57 FR14653). This ESU occupies the Snake River basin, which drains portions of southeastern Washington, northeastern Oregon, and north/central Idaho. Environmental conditions are generally drier and warmer in these areas than in areas occupied by other Chinook ESUs. The Grande Ronde River system, including Catherine Creek, is in northeastern Oregon and contributes to Snake River basin Chinook production.

SR spring/summer Chinook exhibit a stream-type life history. Juvenile fish mature in fresh water for one year before they migrate to the ocean in the spring of their second year. Adults re-enter the Columbia River in late February and early March after two or three years in the ocean. In high elevation areas, mature fish hold in cool, deep pools until late summer and early fall, when they return to their native streams to begin spawning. Eggs incubate through the fall and winter and emergence begins in the late winter and early spring.

Direct estimates of historical annual SR spring/summer Chinook returns are not available. However, according to Matthews and Waples (1991) total annual SR spring/summer Chinook production may have exceeded 1.5 million adult fish in the late 1800s. Total (natural- + hatchery-origin) returns fell to roughly 100,000 spawners by the late 1960s (Fulton 1968) and were below 10,000 by 1980 (NOAA 2003). Between 1981 and 2000, total returns fluctuated between extremes of 2,400 and 43,000 fish. The 2001 total return increased to over 162,000 adults. However, it is important to note that over 80% of these returning adults originated in hatcheries (NOAA 2003).

Natural-origin SR spring/summer Chinook returns over the Lower Granite Dam fluctuated between 1,800 and 12,500 fish during the period of 1980 to 1999. Despite brief increases in the 1992 and 1993 returns, natural returns were consistently lowest during the1990s. Five-year averages of natural-origin returns show a distinct downward trend with time. The five-year natural-origin return averages for 1980-1984, 1985-1989, 1990-1994, and 1995-1999, were 9,090, 8,820, 7,380, and 4,810 fish, respectively. Estimated natural-origin returns for 2000 and 2001 increased to 7,200 and 17,000 fish, respectively (NOAA 2003).

The natural-origin SR spring/summer Chinook population growth rate must exceed 1.0 for ESU growth. Long-term SR spring/summer Chinook population growth rate estimates are below 1.0 and reflect the large population declines seen from the 1960s through the late 1990s. Although natural-origin returns in 2000 and 2001 gave rise to positive short-term growth rates, they were

still well below the interim abundance target of 41,900 natural-origin spawners needed for ESU population recovery (NOAA 2003).

Redd counts for SR spring Chinook in the Upper Grande Ronde River parallel the basin-wide trend of decreasing natural-origin spawners. Recent redd counts peaked at 305 per mile in 1968, but have steadily declined since then. Between 1984 and 2001, redds fluctuated between 2 and 16 per mile (NOAA 2003).

SR Steelhead

The SR steelhead ESU was listed as threatened on August 18, 1997 (62 FR43937) and protective regulations were issued under section 4(d) of the ESA on July 10, 2000 (65 FR 42422). This ESU occupies the Snake River basin, which drains portions of southeastern Washington, northeastern Oregon, and north/central Idaho. Environmental conditions are generally drier and warmer in these areas than in areas occupied by other steelhead ESUs. The Grande Ronde River system, including Catherine Creek, is in northeastern Oregon and is one of the principal contributors to steelhead production in the Snake River basin.

The SR steelhead run is considered a summer run based on the timing of adult upstream migration and consists of both A-run fish and B-run fish. A-run fish spend one year in the ocean before returning to spawn while the larger, B-run steelhead spend two years at sea before they return to spawn. The Grande Ronde steelhead run consists primarily of A-run fish.

Adult SR steelhead enter the Columbia River in the summer and migrate upriver until they spawn between March and May of the following year. There are few annual estimates of steelhead returns for specific production areas within the Snake River Basin. Most stream return estimates are extrapolated from returns over the Ice Harbor and Lower Granite Dams. Annual estimates of total (natural + hatchery-origin) returns steadily declined from about 110,000 to about 12,000 fish between 1962 and 1974. This was a nearly 90% decline over eight years. Estimated total return steadily climbed to approximately 130,000 spawners by 1986, but then oscillated, on a three-year cycle, between about 130,000 and 40,000 individuals until 1994 (Busby *et al.* 1996). Returns then fluctuated between 70,000 and 90,000 from 1995 to 1999, and increased to approximately 260,000 fish in 2001 (NOAA 2003). However, the overwhelming majority of these increases are due to returning hatchery-produced fish. It is estimated that natural-origin spawners only accounted for about 15% of these returns (NOAA 2003).

Natural-origin returns were estimated at 14,000 fish in 1975, then steadily climbed to, and held at, close to 27,000 fish between 1985 and 1987. Returns steadily declined to about 7,000 natural-origin spawners by 1994 (Busby *et al.* 1996). Recent counts of natural-origin spawners at the Lower Granite Dam increased to approximately 39,000 fish in 2001. However, this is still below the interim recovery target of 53,700 natural-origin spawners needed for population recovery of the ESU.

In order for the ESU population to increase, the growth rate for the natural-origin population must exceed 1.0. The ESU's exact population growth rate is not known, but it lies somewhere

between best case estimates that assume no hatchery-origin fish account for natural production, and worst case estimates that assume both hatchery and wild fish contribute to natural production in proportion to their numbers. Short-term growth rate estimates range between 1.013 and 0.753 for the ESU (NOAA 2003). However, median long-term growth rate estimates range from 0.998 to 0.733. Thus, despite recent increases in total steelhead returns to the Snake River basin, it is likely that the natural-origin SR steelhead population is actually decreasing.

2.1.2 Evaluating the Proposed Action

The standards for determining jeopardy are set forth in section 7(a)(2) of the ESA as defined by 50 CFR Part 402 (the consultation regulations). In conducting analyses of habitat altering actions under section 7 of the ESA, NOAA Fisheries uses the following steps: (1) Consider the status and biological requirements of the species; (2) evaluate the relevance of the environmental baseline in the action area to the species' current status; (3) determine the effects of the proposed or continuing action on the species; (4) consider cumulative effects; and (5) determine whether the proposed action, in light of the above factors, is likely to appreciably reduce the likelihood of species survival in the wild or adversely modify its critical habitat, or both.

2.1.3 Biological Requirements

Definition of the species' biological requirements within the action area is the first step NOAA Fisheries uses when applying ESA section 7(a)(2) to the listed ESUs considered in this Opinion. Biological requirements are population and habitat characteristics necessary for the listed ESUs to survive and recover to naturally-reproducing population sizes, at which time protection under the ESA would become unnecessary. The listed species' biological requirements may be described as characteristics of the habitat, population or both (McElhany *et al.* 2000).

The Project will occur within SR Chinook salmon critical habitat as designated October 25, 1999 (64 FR 57399). Freshwater critical habitat includes all waterways, substrates, and adjacent riparian areas below longstanding, impassable natural barriers (*e.g.*, waterfalls in existence for several hundred years) and identified dams that block access to former habitat.

For actions that affect freshwater habitat, NOAA Fisheries may describe the habitat portion of a species' biological requirements in terms of a concept called properly functioning condition (PFC). PFC is defined as the sustained presence of natural habitat-forming processes in a watershed that are necessary for the long-term survival of the species through the full range of environmental variation (NOAA Fisheries 1999).

Essential features of critical habitat for SR Chinook salmon are: (1) Substrate, (2) water quality, (3) water quantity, (4) water temperature, (5) water velocity, (6) cover/shelter, (7) food (juvenile only), (8) riparian vegetation, (9) space, and (10) safe passage conditions (58 FR 68543 and 64 FR 57399). NOAA Fisheries typically considers the status of habitat features in a matrix of pathways and indicators (MPI) in which baseline environmental conditions are described as "properly functioning," "at risk," or "not properly functioning" (NOAA Fisheries 1996). The

proper functioning of these habitat features is necessary to support successful adult and juvenile migration, adult holding, spawning, incubation, rearing, and the growth and development of juvenile fish to adulthood. With the exception of food, all of these features of habitat are included in the MPI. The habitat features most likely to be affected by the proposed Project are substrate, water quality, water temperature, water velocity, cover/shelter, food, and riparian vegetation.

2.1.4 Environmental Baseline

The environmental baseline is the current status of the species and the condition of its habitat within the action area. Assessment of the environmental baseline is based on the aggregated effects of all past and ongoing human-caused and natural factors. The "action area" is defined as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action" (50 CFR 402.02). The action area for this consultation is on Catherine Creek and includes the immediate project footprint and extends to the furthest extent of the turbidity plume generated by the Project (approximately one half mile).

The Upper Grande Ronde subbasin is bordered on the west and northwest by the Blue Mountains and on the east by the Wallowa Mountains. Catherine Creek is an approximately 60-mile long tributary of this watershed that originates in the Wallowa Mountains. Historically, alpine forests dominated at higher elevations then gave way to forested plateaus, shrubs, and finally grasslands at the valley floor. The subbasin also included diverse wetland communities. Winters are typically wet and cold, while summers tend to be hot and dry. Annual rainfall ranges from between 40 and 50 inches in the mountains down to 12 to 23 inches in the valleys.

Much of the Grande Ronde system has been channelized, and significant portions of the valley have been converted to agricultural lands over the last 150 years. The cumulative effects of irrigation diversions, livestock grazing, timber harvest, road construction, and stream channelization have disturbed watershed conditions, reduced wetlands, and degraded many essential habitat elements. Approximately 400 stream miles in this subbasin have been identified as having degraded riparian habitat. Consequently, many streams in the subbasin experience summer water temperatures that can exceed 73° F for more than seven days. This problem is exacerbated by low summer flows due to irrigation diversions during the dry summer months. Other instream environmental concerns include increased turbidity, sedimentation, and elevated nutrient and chemical levels.

The environmental baseline for Catherine Creek was evaluated at the watershed scale to assess the current condition of instream, riparian, and watershed factors that collectively provide aquatic habitat functions essential for the survival and recovery of listed salmonids. The results of this MPI-based evaluation are shown in the following table and indicate that all Catherine Creek indicators are either functioning at risk or not properly functioning.

Table 1. Summary of Environmental Baseline Conditions for Catherine Creek based on the Matrix of Pathways and Indicators.

PATHWAYS: Indicators	**ENVIRONMENTAL BASELINE**			
	Properly Functioning	At Risk	Not Properly Functioning	Notes
Water Quality: Temperature			X	DEQ[1] 303d list
Sediment		X		assumed due to phosphorus/sediment association
Chemicals			X	DEQ 303d list for phosphorus, pH, O_2
Nutrients		X		SWCD[2] Water Quality report
Habitat Access: Physical Barriers		X		barriers limit migration at base & low flows
Habitat Elements: Substrate		X		has been manipulated
Large Woody Debris		X		lacking in watershed
Pool Frequency			X	DEQ 303d list
Pool Quality		X		inadequate cover or temperature
Off-Channel Habitat		X		some backwaters
Refugia		X		not adequately buffered
Channel Conditions & Dynamics: Width/Depth Ratio			X	DEQ 303d list
Streambank Cond.			X	DEQ 303d list
Floodplain Connectivity		X		severely modified
Flow/Hydrology: Peak/Base Flows			X	DEQ 303d list fish holding not possible after early summer
Drainage Network Increase		X		
Watershed Conditions: Road Density & Location		X		extensive road system mostly near streams
Disturbance History		X		extensive
Riparian Reserves		X		fragmented system

[1] Department of Environmental Quality, Oregon State

[2] Soil and Water Conservation District

2.1.5 Effects of the Proposed Action

Effects of an action are: "The direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated or interdependent with the action, that will be added to the environmental baseline" (50 CFR 402.02). Direct effects are those that occur during Project activities, and may extend upstream or downstream from the Project site, based on the potential for affecting the species' habitat. Indirect effects are those that are caused by the proposed action but occur sometime after the action is completed. Interrelated actions are those that are part of a larger action and depend on that larger action for their justification. Interdependent actions are those that have no independent utility apart from the action under consideration (50 CFR 402.02).

Effects of In-Water Construction on ESA-Listed Salmonids

Construction activities include draining two ponds, operation of heavy machinery, installation of temporary cofferdams, removal or replacement of three culverts, removal of approximately 3,380 cubic yards of sediment, reinforcement of existing concrete structures, and the removal of some riparian vegetation. Draining the ponds may result in the harassment or harm of juvenile SR spring/summer Chinook salmon and SR steelhead if they become stranded and require salvage. The in-water and near-water construction activities are also expected to cause temporary increases of both sediment input and total suspended solids (TSS) into Catherine Creek. Heavy machinery operation in or near the water also has the potential for introducing toxic contaminants into the stream.

Fish Salvage

Direct effects on juvenile SR spring/summer Chinook salmon and juvenile SR steelhead will occur in the form of harassment, physical harm, or death if a fish salvage operation is necessary to remove them from the action area. If required, an ODFW fish biologist will remove stranded fish from the ponds by netting, seining, trapping, or electrofishing. The capture and transfer of these fish will create stress and may cause direct physical injury or death. Stress approaching or exceeding the physiological tolerance limits of individual fish can impair reproductive success, growth, resistance to infectious diseases, and may cause mortality (Wedemeyer *et al.* 1990). Electrofishing is particularly stressful to fish. Harmful effects are detailed by Snyder (2003) and include internal and external hemorrhage, fractured spines, and death. Given planned conservation measures and the small number of ESA listed salmonids that may be present during project activities, the potential for significant negative impacts due to fish salvage operations is minimal.

Suspended Solids and Sedimentation

Increased sediment input into Catherine Creek can have direct negative effects on SR spring/summer Chinook salmon and steelhead if they are present during construction. Salmonid gill flaring and feeding changes have been observed in response to pulses of suspended sediment (Berg and Northcote 1985) and turbidity plume avoidance has been observed in salmonids and other fish (DeVore *et al.* 1980; Sigler *et al.* 1984; Lloyd 1987; Llyod *et al.* 1987; Servizi and Martens 1991). Chronic exposure to high turbidity may injure or even kill fish (Spence *et al.*

1996). Sedimentation due to suspended solids settling out of the water increases the embeddedness of streambed gravel and may reduce the value of spawning habitat downstream from the source. Redeposited fine sediments may also reduce incubation success by smothering eggs and newly-emerged fry (Bell 1991). Given the expectation for low stream flows and the planned measures to reduce sediment flow to the creek, sediment input is expected to be minimal, localized, and of short duration. When combined with the low likelihood of salmonid presence during construction activities, the direct impacts of increased TSS and sedimentation on ESA listed salmonids are expected to be negligible.

Toxic Contamination

Fuels or other contaminants could potentially enter the stream from spills associated with the use of heavy equipment in or near the stream. Fuel and lubricant spills that enter a waterbody directly or through the adjacent riparian zone can injure and kill aquatic organisms. Petroleum-based contaminants, such as fuels, oils, and some hydraulic fluids, contain polycyclic aromatic hydrocarbons (PAHs), which can be acutely toxic to salmonids at high levels of exposure and can also have chronic lethal and acute and chronic sublethal effects on other aquatic organisms (Neff 1985). The risk from chemical contamination during in-water work activities will be minimized by cleaning all heavy equipment before their entering the drained ponds, by restricting other construction activities to the top of the bank or to existing roads, and by ensuring fueling and servicing operations are conducted at least 150 feet from any running water. The potential for direct mortality of ESA-listed salmonids from chemical contamination should be negligible with these precautions in place.

Riparian Disturbances / Woody Debris Placement

Project construction necessitates the removal of 2 or 3 small trees and the disturbance of some small shrubs and grasses along a short section of the lower pond bank that will be used to allow equipment access for sediment removal. Juvenile salmonids require complex habitat that includes riparian cover and large woody debris to provide shade, shelter from high velocity stream flows, and protection from predators. The loss of this riparian vegetation will not appreciably reduce shade or bankside cover for juvenile salmonids. Any large wood that is cut will be added to other wood that will be placed in the pond to increase woody debris on completion of sediment removal. The negative effects of riparian disturbance from this project should be minimal and short-term. Long-term, beneficial effects in the form of increased cover should result from the placement of large wood pieces.

2.1.6 Cumulative Effects

"Cumulative effects" are defined in 50 CFR 402.02 as those effects of "future state or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation."

Several activities that have the potential to impact fish and habitat within the action area are occurring, and are reasonably certain to continue in the future, on private lands within the

Catherine Creek watershed. These activities include urban growth, timber harvest, grazing, and water withdrawal for irrigation.

Between 1990 and 2000, the population of Union County increased by 3.9%.[3] Thus, NOAA Fisheries assumes that future private and state actions will continue within the action area, but at increasingly higher levels as population density climbs and development pressures on natural resources increase. Similarly, livestock grazing and water withdrawal for irrigation are likely to occur at present or higher levels for the foreseeable future.

2.1.7 Conclusion

NOAA Fisheries has determined that when the effects of the subject action addressed in this Opinion are added to the environmental baseline and cumulative effects occurring in the action area, they are not likely to jeopardize the continued existence of SR spring/summer Chinook salmon and SR steelhead. Nor will the Project result in adverse modification of designated critical habitat for SR Chinook salmon.

NOAA Fisheries' conclusions are based on the following considerations: (1) All instream work will occur during the ODFW in-water work window for this area, July 1 to August 15; (2) the affected area will be small and instream work will be limited to that described in the BA; (3) the streambanks and bed will be re-stabilized and restored to pre-construction conditions; (4) the disturbed riparian area will be minimal in size and temporary in nature and; (5) the long-term effects of this project will be beneficial to ESA-listed salmonids in that the ponds will be deeper, cooler, and will afford more cover with the inclusion of woody debris. Thus, the proposed action is not expected to impair habitats that are currently functioning properly, appreciably reduce the functioning of already impaired habitats, or retard the long-term progress of impaired habitats toward proper functioning condition essential to the long-term survival and recovery at the population or ESU scale.

2.1.8 Reinitiation of Consultation

As provided in 50 CFR 402.16, reinitiation of formal consultation is required if: (1) The amount or extent of taking specified in the incidental take statement is exceeded, or is likely to be exceeded; (2) new information reveals effects of the action may affect listed species in a way not previously considered; (3) the action is modified in a way that causes an effect on listed species that was not previously considered; or (4) a new species is listed or critical habitat is designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operation causing such take must cease, pending conclusion of the reinitiated consultation. This Opinion and incidental take statement cover the described actions if conducted within 5 years of the signature date. Any activities not completed by that date will

[3] U.S. Census Bureau, State and County Quickfacts, Union County, Oregon. Available at: http://quickfacts.census.gov/qfd/states/41/41061.html

require subsequent consultation. To reinitiate consultation with NOAA Fisheries, the BPA must contact the Habitat Conservation Division of NOAA Fisheries, Oregon State Habitat Office and refer to: 2004/00630.

2.2 Incidental Take Statement

The ESA at section 9 [16 USC 1538] prohibits take of endangered species. The prohibition of take is extended to threatened anadromous salmonids by section 4(d) rule [50 CFR 223.203]. Take is defined by the statute as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct" [16 USC 1532(19)]. Harm is defined by regulation as "an act which actually kills or injures fish or wildlife. Such an act may include significant habitat modification or degradation which actually kills or injures fish or wildlife by significantly impairing essential behavior patterns, including, breeding, spawning, rearing, migrating, feeding or sheltering" [50 CFR 222.102]. Harass is defined as "an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering" [50 CFR 17.3]. Incidental take is defined as "takings that result from, but are not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or applicant" [50 CFR 402.02]. The ESA at section 7(o)(2) removes the prohibition from any incidental taking that is in compliance with the terms and conditions specified in a section 7(b)(4) incidental take statement [16 USC 1536].

An incidental take statement specifies the impact of any incidental taking of endangered or threatened species. It also provides reasonable and prudent measures that are necessary to minimize impacts and sets forth terms and conditions with which the action agency must comply to implement the reasonable and prudent measures.

2.2.1 Amount or Extent of the Take

The proposed action is reasonably certain to result in incidental take of juvenile SR spring/summer Chinook salmon and juvenile SR steelhead. NOAA Fisheries is reasonably certain the incidental take described here will occur because: (1) These listed species are known to occur in the action area; (2) the proposed action is likely to cause death or injury, or impair feeding, breeding, migrating, or sheltering for the listed species.

Some level of incidental take is expected in the form of harassment, injury, or death of juvenile SR spring/summer Chinook salmon and juvenile SR steelhead during instream work and fish salvage operations. The temporary increase in sediment and turbidity is expected to cause fish to avoid disturbed areas of the stream, both within and downstream from the Project area. Incidental take, in the form of lethal or sublethal effects, may occur if toxins are introduced into the water. Incidental take may also occur as harassment or harm if fish salvage operations are required.

NOAA Fisheries expects the habitat-related effects of these actions to cause some low level of incidental take. However, because of the inherent biological characteristics of aquatic species such as SR spring/summer Chinook salmon and SR steelhead, take attributable to this action cannot be quantified by the number of fish harassed, harmed, or killed. In instances such as these, NOAA Fisheries designates a quantified habitat surrogate. The amount of disturbed habitat is an area equal to that occupied by the two ponds and the three culverts that will be removed or replaced, or approximately 28,500 square feet. Take caused by the proposed action could also continue downstream to the extent of the generated turbidity plume, approximately one half mile.

Pond draining and fish salvage operations are likely to cause quantifiable levels of take. StreamNet estimates smolt densities for spring Chinook and summer steelhead in Catherine Creek at 2035 and 303 smolt per mile respectively.[4] However, because the plan to drain the ponds slowly should allow most fish to escape with the receding water, and given the relatively small area to be dewatered and the timing of the work, NOAA Fisheries expects few fish will require salvage. Take of ESA-listed salmonids from pond drainage and fish salvage should not exceed 100 juveniles handled and no more than 5 listed fish should be seriously injured or killed. If the plume is observed further than one half mile downstream, or more than 100 juveniles are taken, BPA must re-initiate consultation, because the amount or extent of take has been exceeded.

This exemption from the take prohibition includes only take caused by the proposed action as described in the BA and above, within the action area as defined in this Opinion.

2.2.2 Reasonable and Prudent Measures

NOAA Fisheries believes that the following reasonable and prudent measures are necessary and appropriate to minimize the impact of incidental taking on the above species. The BPA, in respect to their proposed or ongoing activities addressed in this Opinion, shall:

1. Avoid or minimize the amount and extent of take resulting from general construction activities, riparian disturbance, and in-water work required to complete the proposed Project addressed in this Opinion.

2. Avoid or minimize the likelihood of incidental take from any source of toxic contamination from leaks or spills into and within watercourses.

3. Minimize the amount and extent of incidental take resulting from fish salvage operations.

4. Monitor the effects of the proposed action to confirm this Opinion is achieving its objective of avoiding or minimizing take from permitted actions.

[4] Available at streamnet.org (obtained 6/22/04)

2.2.3 Terms and Conditions

To be exempt from the prohibitions of section 9 of the ESA, the action must be carried out in compliance with the following terms and conditions, which implement the reasonable and prudent measures described above for each category of activity. These terms and conditions are non-discretionary.

1. To implement reasonable and prudent measure #1 (general construction, riparian disturbance, and in-water work), the BPA shall ensure that:

    a. Minimum area. Construction impacts are confined to the minimum area necessary to complete the Project.
    b. Timing of instream work. Instream work below the bankfull elevation[5] will be completed using the most recent ODFW-preferred in-water work period for the Project area (presently July 1 to August 15).
    c. Cessation of work. Project operations will cease under high flow conditions that may result in inundation of the Project area, except for efforts to avoid or minimize resource damage.
    d. Pre-construction activity. The following actions will be completed before significant[6] alteration of the Project area.
        i. Marking. Flag the boundaries of clearing limits associated with site access and construction to prevent ground disturbance of critical riparian vegetation, wetlands and other sensitive sites beyond the flagged boundary.
        ii. Emergency erosion controls. Ensure that a supply of sediment control materials (*e.g.*, silt fence, straw bales)[7] for emergency erosion control is on site.
        iii. Temporary erosion controls. All temporary erosion controls will be in place and appropriately installed downslope from Project activity within the riparian area until site restoration is complete.
        iv. General erosion control. Appropriate practices are employed to prevent erosion and sedimentation associated with access roads, stream crossings, drilling sites, construction sites, borrow pit operations, haul roads, equipment and material storage sites, fueling operations, staging areas, and roads being decommissioned.
        v. Inspection of erosion controls. During construction, monitor instream turbidity and inspect all erosion controls daily during the rainy season and

[5] 'Bankfull elevation' means the bank height inundated by a 1.5 to 2-year average recurrence interval and may be estimated by morphological features such average bank height, scour lines and vegetation limits.

[6] 'Significant' means an effect can be meaningfully measured, detected or evaluated.

[7] When available, certified weed-free straw or hay bales will be used to prevent introduction of noxious weeds.

weekly during the dry season, or more often as necessary, to ensure the erosion controls are working adequately.[8]

(1) If monitoring or inspection shows that the erosion controls are ineffective, mobilize work crews immediately to make repairs, install replacements, or install additional controls as necessary.

(2) Remove sediment from erosion controls once it has reached 1/3 of the exposed height of the control.

e. Site preparation. Conserve native materials for site restoration.

i. If possible, leave native materials where they are found.

ii. Where vegetation must be removed, such as for equipment access, cut it to ground level and leave the root system intact whenever possible.

iii. If materials are moved, damaged or destroyed, replace them with a functional equivalent during site restoration.

iv. Stockpile any large wood,[9] native vegetation, weed-free topsoil, and native channel material displaced by construction for use during site restoration.

f. Earthwork. Complete earthwork (including excavation, filling, and compacting) as quickly as possible.

i. Heavy equipment. When heavy equipment will be used, the equipment selected will have the least adverse effects on the environment (*e.g.*, minimally-sized, low ground pressure equipment).

ii. Site stabilization. Stabilize all disturbed areas before any break in work expected to exceed four days.

iii. Source of materials. Obtain boulders, rock, woody materials and other natural construction materials used for the Project from outside the riparian area.

g. Pesticides and fertilizers. Do not apply surface fertilizers, herbicides, or other pesticides within 200 feet of any stream channel.

2. To implement reasonable and prudent measure #2 (pollution control), the BPA shall ensure that:

a. Pollution Control Plan. Prepare and carry out a pollution and erosion control plan to prevent pollution caused by surveying or construction operations. The plan must be available for inspection on request by NOAA Fisheries.

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[8] 'Working adequately' means that Project activities do not increase ambient stream turbidity by more than 10% above background 100 feet below the discharge, when measured relative to a control point immediately upstream from the turbidity causing activity.

[9] For purposes of this Opinion only, 'large wood' means a tree, log, or rootwad big enough to dissipate stream energy associated with high flows, capture bedload, stabilize streambanks, influence channel characteristics, and otherwise support aquatic habitat function, given the slope and bankfull channel width of the stream in which the wood occurs. See Oregon Department of Forestry and Oregon Department of Fish and Wildlife, *A Guide to Placing Large Wood in Streams*, May 1995 (www.odf.state.or.us/FP/RefLibrary/LargeWoodPlacemntGuide5-95.doc).

i. Plan Contents. The pollution and erosion control plan will contain the pertinent elements listed below, and meet requirements of all applicable laws and regulations.

(1) The name and address of the party(s) responsible for accomplishment of the pollution and erosion control plan.

(2) Practices to confine, remove and dispose of excess concrete, cement, grout, and other mortars or bonding agents, including measures for washout facilities.

(3) A description of any regulated or hazardous products or materials that will be used for the Project, including procedures for inventory, storage, handling, and monitoring.

(4) A spill containment and control plan with notification procedures, specific cleanup and disposal instructions for different products, quick response containment and cleanup measures that will be available on the site, proposed methods for disposal of spilled materials, and employee training for spill containment.

(5) Practices to prevent construction debris from dropping into any stream or waterbody, and to remove any material that does drop with minimum disturbance to the streambed and water quality.

ii. Vehicle and material staging. Store construction materials and fuel and operate, maintain, and store vehicles as follows.

(1) To reduce the staging area size and the potential for contamination, store on site only enough supplies and equipment to complete a specific job.

(2) Store fuel and conduct all equipment staging, cleaning, maintenance, and refueling operations in a staging area at least 150 feet away from the creek bank or any running water connected to it.

(3) Before operation, inspect daily all equipment to be operated in the ponds or within 150 feet of the creek bank. Check for, repair, and clean any fluid leaks before leaving the vehicle staging area. Document inspections in a record that is available for review on request by NOAA Fisheries.

(4) Before operations begin, and as often as necessary, steam clean all equipment that will be used below bankfull elevation until all visible oil, grease, mud, and other contaminants are removed.

(5) Diaper all stationary power equipment (*e.g.*, generators, cranes, stationary drilling equipment) operated within any riparian area to prevent leaks, unless suitable containment is provided to prevent potential spills from entering any stream or waterbody.

b. Floating Boom. Whenever surface water is present, deploy an oil-absorbing, floating boom around any equipment that could leak contaminants.

c. Construction discharge water. Treat all discharge water created by construction (*e.g.*, concrete washout, pumping for work area isolation, vehicle wash water, drilling fluids) as follows.

i. Water quality. Design, build, and maintain facilities to collect and treat all construction discharge water using the best available technology applicable to site conditions. Provide treatment to remove debris, nutrients, sediment, petroleum hydrocarbons, metals and other pollutants likely to be present.

ii. Discharge velocity. If construction discharge water is released using an outfall or diffuser port, velocities may not exceed 4 feet per second, and the maximum size of any aperture may not exceed one inch.

iii. Pollutants. Do not allow pollutants, including green concrete, contaminated water, silt, welding slag, sandblasting abrasive, or grout cured less than 24 hours, to contact any wetland or the 2-year floodplain.

3. To implement reasonable and prudent measure #3 (fish salvage), the BPA shall ensure that:

a. Fish screens. Install, operate, and maintain, according to NOAA Fisheries' fish screen criteria,[10] a fish screen on any water intake used for Project construction. This includes lines and pumps used to supply stock water from the creek.

b. Capture and release. Fish Handling and Transfer Protocols – Where the capture, removal, and relocation of ESA-listed fish are required, the BPA shall ensure that:

i. Have an ODFW fisheries biologist experienced with work area isolation and competent to ensure the safe handling of all ESA-listed fish conduct or supervise the operation

ii. Use one, or a combination, of the following methods to most effectively capture ESA-listed fish and minimize harm.

(1) Hand Netting. Collect fish by hand or dip nets, as the area is slowly dewatered.

(2) Seining. Seine using a net with mesh of such a size as to ensure entrapment of the residing ESA-listed fish.

(3) Minnow Trap. Place minnow traps overnight and in conjunction with seining.

[10] National Marine Fisheries Service, *Juvenile Fish Screen Criteria* (revised February 16, 1995) and *Addendum: Juvenile Fish Screen Criteria for Pump Intakes* (May 9, 1996) (guidelines and criteria for migrant fish passage facilities, and new pump intakes and existing inadequate pump intake screens) (http://www.nwr.noaa.gov/1hydrop/hydroweb/ferc.htm).

(4) Electrofishing. If used, follow NOAA Fisheries guidelines for electrofishing.[11] Note that electrofishing should only be used as a last resort.

iii. Fish Storage and Release. Where the capture, removal, and relocation of ESA-listed fish is required the BPA shall ensure that:

(1) Handle captured fish with extreme care and keep them in water to the maximum extent possible during transfer procedures. Use of a sanctuary net is recommended.[12]

(2) Utilize large buckets (5-gallon or greater) and minimize the number of fish stored in each bucket to prevent overcrowding.

(3) Place large fish in buckets separate from smaller prey-sized fish.

(4) Maintain appropriate water temperature in holding buckets and monitor the condition of captured fish.

(5) Release fish in a pool or area that provides cover and flow refuge upstream from the isolated reach after fish have recovered from the stress of capture.

(6) Document all fish injuries or mortalities.

4. To implement reasonable and prudent measure #4 (monitoring), the BPA shall ensure that:

a. Instream work documentation. Monitor and document all instream work as necessary to describe the BPA's success in meeting the terms and conditions contained in this Opinion.

b. Reporting. Submit an instream construction monitoring report to NOAA Fisheries within one year of Project completion. The construction monitoring report shall include the following information.

i. Project identification

(1) Project name.

(2) BPA contact person.

(3) Starting and ending dates for work completed.

ii. Photo documentation. Photos of habitat conditions at the Project site before, during, and after Project completion.[13]

(1) Include general views and close-ups showing details of the Project and Project area, including pre and post construction.

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[11] National Marine Fisheries Service, Backpack Electrofishing Guidelines (December 1998) (http://www.nwr.noaa.gov/1salmon/salmoesa/pubs/electrog.pdf).

[12] A sanctuary net is a net that has a solid bottom bag that allows for the retention of a small amount of water in the net, thus allowing for less potential impact to netted fish from the net mesh.

[13] Relevant habitat conditions may include characteristics of channels, eroding and stable streambanks in the Project area, riparian vegetation, water quality, flows at base, bankfull and over-bankfull stages, and other visually discernable environmental conditions at the Project area, and upstream and downstream from the Project.

(2) Label each photo with date, time, Project name, photographer's name, and a comment about the subject.

iii. Other data. Additional Project-specific data as appropriate.

(1) Work cessation. Dates work ceased due to high flows, if any.

(2) Pollution control. A summary of pollution and erosion control measures used, inspections, any erosion control failures or contaminant releases, and corrective efforts.

(3) Site preparation.

(a) Total cleared area – riparian and upland.

(b) Total new impervious area.

(4) Isolation of in-water work area, capture and release.

(a) Stream conditions before, during, and one week after completion of work area isolation.

(b) Methods of work area isolation and take minimization.

(5) Fish screen. Evidence of compliance with NOAA Fisheries' fish screen criteria.

(6) Fish stranding. The number of fish observed stranded in or below the Project area and any mortality that occurred due to salvage efforts to relocate these fish.

(a) Supervisory fish biologist – name and contact information.

(b) Method used to capture stranded fish.

(c) Number of each listed species captured.

(d) Location and condition of all fish released.

(e) Any incidence of injury or mortality of listed species.

(7) Fish passage. An assessment of the ability of fish to pass through the Project area during various stream flow conditions.

(8) Site restoration. Photos or other documentation that site restoration performance standards were met.

c. Physical Channel Alteration. Provide information, including photographs, summarizing the effectiveness of the Project design in meeting the bank and streambed restabilization goals. If any Project elements fail, provide information on the effects of this failure on salmonid habitat and stream channel morphology.

d. Effectiveness monitoring. Gather any other data or analyses the BPA deems necessary or helpful to complete an assessment of habitat trends in stream and riparian conditions as a result of this Project.

e. Lethal take. If a sick, injured, or dead specimen of a threatened or endangered species is found, the finder must notify the Vancouver Field Office of NOAA Fisheries Law Enforcement at (360) 418-4246. The finder must take care in handling sick or injured specimens to ensure effective treatment, and in handling dead specimens to preserve biological material in the best possible condition for later analysis of cause of death. The finder is also responsible for following instructions provided by Law Enforcement to ensure that evidence intrinsic to the specimen is not disturbed unnecessarily.

f. Report submission. Submit a copy of the report to the Oregon State Habitat Office of NOAA Fisheries.

Director, Oregon State Habitat Office
Habitat Conservation Division
National Marine Fisheries Service
Attn: 2004/00630
525 NE Oregon Street
Portland, OR 97232

3. MAGNUSON-STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT

3.1 Background

The MSA, as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), requires the inclusion of EFH descriptions in Federal fishery management plans. In addition, the MSA requires Federal agencies to consult with NOAA Fisheries on activities that would adversely affect EFH.

EFH means those waters and substrates necessary to fish for spawning, breeding, feeding, or growth to maturity (MSA §3). For the purpose of interpreting the definition of EFH: "Waters" include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; "substrate" includes sediment, hard bottom, structures underlying the waters, and associated biological communities; "necessary" means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and "spawning, breeding, feeding, or growth to maturity" covers a species' full life cycle (50 CFR 600.110).

Section 305(b) of the MSA (16 U.S.C. 1855(b)) requires that:

- Federal agencies must consult with NOAA Fisheries on all actions or proposed actions authorized, funded, or undertaken by the agency, that may adversely affect EFH;

- NOAA Fisheries shall provide conservation recommendations for any Federal or state activity that may adversely affect EFH;

- Federal agencies shall, within 30 days after receiving conservation recommendations from NOAA Fisheries, provide a detailed response in writing to NOAA Fisheries regarding the conservation recommendations. The response shall include a description of measures proposed by the agency for avoiding, mitigating or offsetting the impact of the activity on EFH. In the case of a response that is inconsistent with the conservation

recommendations of NOAA Fisheries, the Federal agency shall explain its reason for not following the recommendations.

The MSA requires consultation for all actions that may adversely affect EFH, and does not distinguish between actions within EFH and actions outside EFH. Any reasonable attempt to encourage the conservation of EFH must take into account actions that occur outside EFH, such as upstream and upslope activities, that may have an adverse effect on EFH. Therefore, EFH consultation with NOAA Fisheries is required by Federal agencies undertaking, permitting or funding activities that may adversely affect EFH, regardless of its location.

3.2 Identification of EFH

The Pacific Fisheries Management Council (PFMC) has designated EFH for three species of Pacific salmon: Chinook; coho (*O. kisutch*); and Puget Sound pink salmon (*O. gorbuscha*) (PFMC 1999). Freshwater EFH for Pacific salmon includes all those streams, lakes, ponds, wetlands, and other waterbodies currently or historically accessible to salmon in Washington, Oregon, Idaho, and California, except areas upstream from certain impassable man-made barriers (as identified by the PFMC), and longstanding, naturally-impassable barriers (*e.g.*, natural waterfalls in existence for several hundred years). Detailed descriptions and identifications of EFH for salmon are found in Appendix A to Amendment 14 to the *Pacific Coast Salmon Plan* (PFMC 1999). Assessment of potential adverse effects on these species' EFH from the proposed action is based on this information.

3.3 Proposed Actions

The proposed action is detailed above in section 1.2 of the ESA portion of this Opinion. The action area includes a watershed within the Upper Grande Ronde subbasin. This area has been designated as EFH for various life stages of Chinook and coho salmon.

3.4 Effects of Proposed Action

The effects on Chinook and coho salmon habitat are described in detail in section 2.1.5 of this document. The proposed action may result in short-term adverse effects on a variety of habitat parameters. These adverse effects are:

1. Riparian disturbance from accessing construction area and construction activities performed from the bank.

2. Increased sedimentation from instream construction activities.

3.5 Conclusion

NOAA Fisheries believes that the proposed action may adversely affect EFH for Chinook salmon and coho salmon.

3.6 EFH Conservation Recommendations

Pursuant to section 305(b)(4)(A) of the MSA, NOAA Fisheries is required to provide EFH conservation recommendations for any Federal or state agency action that may adversely affect EFH. In addition to conservation measures proposed for the project by the BPA, the BPA should:

1. Avoid or minimize adverse effects to EFH resulting from general construction activities, riparian disturbance, and in-water work required to complete the proposed Project. To meet this goal, the BPA should ensure that:

    a. Construction impacts are confined to the minimum area necessary to complete the Project.
    b. Instream work below the bankfull elevation[14] be completed using the most recent ODFW-preferred in-water work period for the Project area (presently July 1 to August 15).
    c. Cease project operations under high flow conditions that may result in inundation of the Project area, except for efforts to avoid or minimize resource damage.
    d. The following actions are completed before significant[15] alteration of the Project area.
        i. Flag the boundaries of clearing limits associated with site access and construction to prevent ground disturbance of critical riparian vegetation, wetlands and other sensitive sites beyond the flagged boundary.
        ii. Ensure that a supply of sediment control materials (*e.g.*, silt fence, straw bales)[16] for emergency erosion control is on site.
        iii. All temporary erosion controls should be in place and appropriately installed downslope from Project activity within the riparian area until site restoration is complete.
        iv. Employ appropriate practices to prevent erosion and sedimentation associated with access roads, construction sites, sediment removal operations, haul roads, equipment and material storage sites, fueling operations, staging areas, and roads being decommissioned.
        v. Monitor instream turbidity during construction, and inspect all erosion controls daily during the rainy season and weekly during the dry season,

[14] 'Bankfull elevation' means the bank height inundated by a 1.5 to 2-year average recurrence interval and may be estimated by morphological features such average bank height, scour lines and vegetation limits.

[15] 'Significant' means an effect can be meaningfully measured, detected or evaluated.

[16] When available, certified weed-free straw or hay bales will be used to prevent introduction of noxious weeds.

or more often as necessary, to ensure the erosion controls are working adequately.[17]

(1) If monitoring or inspection shows that the erosion controls are ineffective, mobilize work crews immediately to make repairs, install replacements, or install additional controls as necessary.

(2) Remove sediment from erosion controls whenever it reaches 1/3 of the exposed height of the control.

e. Conserve native materials for site restoration.

i. If possible, leave native materials where they are found.

ii. Where vegetation must be removed, such as for equipment access, cut it to ground level and leave the root system intact whenever possible.

iii. If materials are moved, damaged or destroyed, replace them with a functional equivalent during site restoration.

iv. Stockpile any large wood,[18] native vegetation, weed-free topsoil, and native channel material displaced by construction for use during site restoration.

f. Complete earthwork (including excavation, filling, and compacting) as quickly as possible.

i. When heavy equipment will be used, the equipment selected should have the least adverse effects on the environment (*e.g.*, minimally-sized, low ground pressure equipment).

ii. Stabilize all disturbed areas before any break in work expected to exceed four days.

iii. Obtain boulders, rock, woody materials and other natural construction materials used for the Project from outside the riparian area.

g. Do not apply surface fertilizers, herbicides, or other pesticides within 200 feet of any stream channel.

2. Avoid or minimize adverse effects to EFH from any source of toxic contamination from leaks or spills into and within watercourses. To meet this goal, the BPA should ensure that:

a. A pollution and erosion control plan is prepared and carried out to prevent pollution caused by surveying or construction operations.

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[17] 'Working adequately' means that Project activities do not increase ambient stream turbidity by more than 10% above background 100 feet below the discharge, when measured relative to a control point immediately upstream from the turbidity causing activity.

[18] For purposes of this Opinion only, 'large wood' means a tree, log, or rootwad big enough to dissipate stream energy associated with high flows, capture bedload, stabilize streambanks, influence channel characteristics, and otherwise support aquatic habitat function, given the slope and bankfull channel width of the stream in which the wood occurs. See Oregon Department of Forestry and Oregon Department of Fish and Wildlife, *A Guide to Placing Large Wood in Streams*, May 1995 (www.odf.state.or.us/FP/RefLibrary/LargeWoodPlacemntGuide5-95.doc).

i. The pollution and erosion control plan should contain the pertinent elements listed below, and meet requirements of all applicable laws and regulations.
   (1) The name and address of the party(s) responsible for accomplishment of the pollution and erosion control plan.
   (2) Practices to confine, remove and dispose of excess concrete, cement, grout, and other mortars or bonding agents, including measures for washout facilities.
   (3) A description of any regulated or hazardous products or materials that will be used for the Project, including procedures for inventory, storage, handling, and monitoring.
   (4) A spill containment and control plan with notification procedures, specific cleanup and disposal instructions for different products, quick response containment and cleanup measures that will be available on the site, proposed methods for disposal of spilled materials, and employee training for spill containment.
   (5) Practices to prevent construction debris from dropping into any stream or waterbody, and to remove any material that does drop with minimum disturbance to the streambed and water quality.

ii. Store construction materials and fuel and operate, maintain, and store vehicles as follows.
   (1) To reduce the staging area size and the potential for contamination, store on site only enough supplies and equipment to complete a specific job.
   (2) Store fuel and conduct all equipment staging, cleaning, maintenance, and refueling operations in a staging area at least 150 feet away from the creek bank or any running water connected to it.
   (3) Before operation, inspect daily all equipment to be operated in the ponds or within 150 feet of the creek bank. Check for, repair, and clean any fluid leaks before leaving the vehicle staging area.
   (4) Before operations begin, and as often as necessary, steam clean all equipment that will be used below bankfull elevation until all visible oil, grease, mud, and other contaminants are removed.
   (5) Diaper all stationary power equipment (*e.g.*, generators, cranes, stationary drilling equipment) operated within any riparian area to prevent leaks, unless suitable containment is provided to prevent potential spills from entering any stream or waterbody.

b. Whenever surface water is present, deploy an oil-absorbing, floating boom around any equipment that could leak contaminants.

c. Treat all discharge water created by construction (*e.g.*, concrete washout, pumping for work area isolation, vehicle wash water, drilling fluids) as follows.
   i. Design, build, and maintain facilities to collect and treat all construction discharge water using the best available technology applicable to site

conditions. Provide treatment to remove debris, nutrients, sediment, petroleum hydrocarbons, metals and other pollutants likely to be present.

ii. If construction discharge water is released using an outfall or diffuser port, velocities may not exceed 4 feet per second, and the maximum size of any aperture may not exceed one inch.

iii. Do not allow pollutants, including green concrete, contaminated water, silt, welding slag, sandblasting abrasive, or grout cured less than 24 hours, to contact any wetland or the 2-year floodplain.

3.7 Statutory Response Requirement

The MSA (section 305(b)) and 50 CFR 600.920(j) requires the BPA to provide a written response to NOAA Fisheries' EFH conservation recommendations within 30 days of its receipt of this letter. The response must include a description of measures proposed to avoid, mitigate, or offset the adverse impacts of the activity on EFH. If the response is inconsistent with NOAA Fisheries' conservation recommendations, the BPA shall explain its reasons for not following the recommendations.

3.8 Supplemental Consultation

The BPA must reinitiate EFH consultation with NOAA Fisheries if either the action is substantially revised or new information becomes available that affects the basis for NOAA Fisheries' EFH conservation recommendations (50 CFR 600.920). This consultation covers the proposed activities if completed within 5 years of the signature date. Subsequent actions would require another EFH consultation.

4. DATA QUALITY ACT DOCUMENTATION AND PRE-DISSEMINATION REVIEW

The Data Quality Act (DQA) requires Federal agencies to document that disseminated information is based on adequate science, has been appropriately reviewed, and meets certain quality criteria. The DQA specifies three components contributing to the quality of a document, and they should each be addressed in DQA documentation. They are utility, integrity, and objectivity. Each biological opinion/EFH consultation issued in the NOAA Fisheries Northwest Region must meet these criteria, and include a section documenting compliance with the DQA.

Utility

Utility principally refers to ensuring that the information contained in this consultation is helpful, serviceable, and beneficial to the intended users.

This ESA section 7 consultation on the Catherine Creek Off-Channel Habitat Project will not jeopardize the continued existence of SR spring/summer Chinook salmon and SR steelhead.

Individual copies of this consultation were provided to the BPA, the Grande Ronde Model Watershed, ODFW, and USFWS. This consultation will be posted on the NOAA Fisheries Northwest Region web site (http://www.nwr.noaa.gov). The format and naming adheres to conventional standards for style.

Integrity

Integrity refers to security - the protection of information from unauthorized access or revision, to ensure that the information is not compromised through corruption or falsification.

This consultation was completed on a computer system managed by NOAA Fisheries in accordance with relevant IT security policies and standards set out in Appendix III "Security of Automated Information Resources", OMB Circular A-130, the Computer Security Act, and the Government Information Security Reform Act.

Objectivity

Objectivity refers to how the consultation presents information in an accurate, clear, complete, and unbiased manner, and in the proper context.

Information Product Category
This consultation falls under the product category of natural resource plans.

Standards
This consultation and supporting documents are clear, concise, complete, and unbiased, and were developed using commonly accepted scientific research methods. They adhere to published standards including the NOAA Fisheries ESA Consultation Handbook, ESA Regulations, 50 CFR 402.01 *et seq*., and the MSA implementing regulations regarding EFH, 50 CFR 600.920(j).

Best Available Information
This consultation and supporting documents use the best available information, as referenced in the document's 'Literature Cited' section. This Opinion/EFH consultation contains more background on information sources and quality.

Referencing
All supporting materials, information, data, and analyses are properly referenced, consistent with standard scientific referencing style.

Review Process
This consultation was drafted by NOAA Fisheries staff with training in ESA and MSA implementation, and reviewed in accordance with Northwest Region ESA quality control and assurance processes.

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